

We claim:

1. An exterior sideview mirror system suitable for use in an automobile, said exterior sideview mirror system comprising:

an exterior sideview mirror assembly adapted for attachment to a side of an automobile;

5 said exterior sideview mirror assembly including a reflective element assembly having a rearward field of view when attached to said side of the automobile;

wherein said reflective element assembly comprises a plano reflective element having unit magnification and a separate multiradius reflective element having a multiradius curvature; and

10 said reflective element assembly further including a frame element assembly, said plano reflective element and said multiradius reflective element of said plano-multiradius reflective element assembly being mounted to said frame element assembly, said frame element assembly mounting to an actuator and movable by said actuator in order to position said rearward field of view, and said frame element assembly being adapted to orient said
15 multiradius reflective element such that said multiradius reflective element has a viewing range which fans outwardly and downwardly with respect to a viewing range of said plano reflective element to thereby provide an increased field of view for said exterior sideview mirror assembly.

2. The exterior sideview mirror system of Claim 1, wherein said plano reflective element and said multiradius reflective element are adjacently attached to said frame element assembly at a joint, and wherein said reflective element assembly includes a demarcation element, said demarcation element disposed at said joint to form a demarcation between said
5 plano reflective element and said multiradius reflective element, said demarcation element having a portion visible to a driver of the automobile.

3. The exterior sideview mirror system of Claim 2, wherein said demarcation element is dark colored.

4. The exterior sideview mirror system of Claim 3, wherein said frame element assembly includes a first bezel portion extending around said plano reflective element, said demarcation element comprising a segment of said first bezel portion.

5. The exterior sideview mirror system of Claim 4, wherein said multiradiused reflective element comprises a bent glass substrate with radii of curvature in the range of about 4000 mm to about 100 mm.

6. The exterior sideview mirror system of Claim 1, wherein said frame element assembly includes a frame, said first and second reflective elements being mounted in said frame.

7. The exterior sideview mirror system of Claim 6, wherein said multiradiused reflective element is mounted to said frame at an outboard position, and said plano reflective element is positioned adjacent said multiradiused reflective element and at an inboard position with respect to said multiradiused reflective element when said exterior sideview
5 mirror assembly is mounted to an automobile.

8. The exterior sideview mirror system of Claim 7, wherein said plano reflective element is mounted to said frame by a backing plate.

9. The exterior sideview mirror system of Claim 8, wherein said backing plate is adapted to mount to said actuator.

10. The exterior sideview mirror system of Claim 9, wherein said actuator comprises an electrical actuator.

11. The exterior sideview mirror system of Claim 6, wherein said plano reflective element and said multiradiused reflective element are adjacently attached to said frame, said frame including a first perimeter portion and a second perimeter portion, said first perimeter portion extending around said plano reflective element, and said second perimeter portion
5 extending around said multiradiused reflective element.

12. The exterior sideview mirror system of Claim 11, wherein a side portion of said first perimeter portion of said frame provides a demarcation between said plano reflective element and said multiradiused reflective element.

13. The exterior sideview mirror system of Claim 11, wherein said second perimeter portion is angled downwardly and forwardly with respect to said first perimeter portion when said mirror assembly is mounted to an automobile.

14. The exterior sideview mirror system of Claim 6, wherein said multiradiused reflective element is attached to said frame by at least one of an adhesive attachment and a mechanical attachment.

15. The exterior sideview mirror system of Claim 6, wherein said backing plate is attached to one side of said first reflective element and said frame by one of an adhesive attachment, a welded attachment, and a mechanical attachment.

16. The exterior sideview mirror system of Claim 15, wherein an opposed side of said frame forms a bezel around said plano reflective element.

17. The exterior sideview mirror system of Claim 1, wherein said plano reflective element includes a rearward field of view having a principal axis different from and angled to a principal axis of the rearward field of view of said multiradiused reflective element when mounted in said exterior sideview mirror assembly.

18. The exterior sideview mirror system of Claim 17, wherein said principal axis of the rearward field of view of said multiradiused reflective element is directed generally outwardly and downwardly with respect to a longitudinal axis of the automobile.

19. The exterior sideview mirror system of Claim 18, wherein said principal axis of the rearward field of said multiradiused reflective element forms a downward angle with respect to the longitudinal axis of the automobile in the range from about $.75^{\circ}$ to about 5° .

20. The exterior sideview mirror system of Claim 19, wherein said downward angle is in a range from about 1.5° to about 3.5° .
21. The exterior sideview mirror system of Claim 20, wherein said downward angle is in a range of about 2° to about 3° .
22. The exterior sideview mirror system of Claim 18, wherein said principal axis of said multiradiused reflective element forms an outward angle with respect to the longitudinal axis of the automobile in a range of about 0.75° to about 5° .
23. The exterior sideview mirror system of Claim 22, wherein said outward angle is in a range of about 1° to about 3° .
24. The exterior sideview mirror system of Claim 23, wherein said outward angle is in a range of about 1.25° to about 2.5° .
25. The exterior sideview mirror system of Claim 1, wherein said exterior sideview mirror assembly comprises a fixedly attached exterior sideview mirror assembly.
26. The exterior sideview mirror system of Claim 1, wherein said exterior sideview mirror assembly comprises a break-away exterior sideview mirror assembly.
27. The exterior sideview mirror system of Claim 1, wherein said exterior sideview mirror assembly comprises a powerfold exterior sideview mirror assembly.
28. The exterior sideview mirror system of Claim 1, wherein at least one of said plano reflective element and said multiradiused reflective element comprises a variable reflectance reflective element.

29. The exterior sideview mirror system of Claim 28, wherein each of said plano reflective element and said multiradiused reflective element comprises a variable reflectance reflective element.

30. The exterior sideview mirror system of Claim 1, wherein said plano reflective element comprises an electrochromic reflective element.

31. An automobile exterior sideview mirror system comprising:
an exterior sideview mirror assembly adapted for attachment to a side of an automobile;

said exterior sideview mirror assembly including a mirror casing, a reflective
5 element assembly, and an actuator; and

said reflective element assembly including a frame element assembly, a first reflective element having unit magnification, and a second reflective element having a multiradiused curvature, said frame element assembly mounting said first reflective element and said second reflective element in said mirror casing and being adapted to mount to said
10 actuator, said actuator adjusting the orientation of said reflective element assembly, said first reflective element having a first rearward field of view with a first principal axis, said second reflective element having a second rearward field of view with a second principal axis, and said frame element assembly angling said second principal axis outwardly and downwardly with respect to said first principal axis.

32. The exterior sideview mirror system of Claim 31, wherein said second principal axis is angled outwardly from said first principal axis at an angle in a range of about 0.75° to about 5°.

33. The exterior sideview mirror system of Claim 32, wherein said second principal axis is angled outwardly from said first principal axis at an angle in a range of about 1° to about 3°.

34. The exterior sideview mirror system of Claim 33, wherein said second principal axis is angled outwardly from said first principal axis at an angle in a range of about 1.25° to about 2.5°.

35. The exterior sideview mirror system of Claim 31, wherein said second principal axis is angled downwardly from said first principal axis at an angle in a range of approximately 0.75° to about 5°.

36. The exterior sideview mirror system of Claim 35, wherein said second principal axis is angled downwardly from said first principal axis at an angle in a range of about 1.5° to about 3.5°.

37. The exterior sideview mirror system of Claim 36, wherein said second principal axis is angled downwardly from said first principal axis at an angle in a range of about 2° to about 3°.

38. The exterior sideview mirror system of Claim 31, wherein said second principal axis is directed generally outwardly and downwardly with respect to a longitudinal axis of an automobile when said mirror assembly is mounted to the automobile.

39. The exterior sideview mirror system of Claim 31, wherein said frame element assembly includes a support surface for said second reflective element, said support surface angling said second principal axis of said second reflective element.

40. The exterior sideview mirror system of Claim 31, wherein said second reflective element is outboard of said first reflective element.

41. The exterior sideview mirror system of Claim 31, wherein frame element assembly includes a first open portion and a second open portion, said first open portion receiving said first reflective element, and said second open portion receiving said second reflective element.

42. The exterior sideview mirror system of Claim 41, wherein said second open portion comprises a rearwardly facing open portion when said mirror assembly is mounted to the automobile.

43. The exterior sideview mirror system of Claim 42, wherein said first open portion comprises a forwardly facing open portion when said mirror assembly is mounted to the automobile.

44. The exterior sideview mirror system of Claim 31, wherein at least one of said reflective elements comprises a variable reflectance reflective element.

45. The exterior sideview mirror system of Claim 31, wherein at least one of said first reflective element and said second reflective element comprises an electro-optic reflective element.

46. An automobile exterior sideview mirror system comprising:
an exterior sideview mirror assembly adapted for attachment to a side of an automobile; and

said exterior sideview mirror assembly including an actuator and a reflective element assembly, said reflective element assembly having a frame element assembly, a first reflective element, and a second reflective element, said first reflective element comprising a plano reflective element, said second reflective element comprising a multiradiused reflective element having a multiradiused curvature, said frame element assembly being adapted to mount to said actuator and including a frame and a support surface for said second reflective element, said actuator adjusting an orientation of said reflective element assembly, said support surface orienting said second reflective element downwardly and forwardly of said first reflective element when said mirror assembly is mounted to an automobile whereby said second reflective element provides a viewing range which spans outwardly and downwardly with respect to the automobile to thereby provide an increased field of view for said exterior sideview mirror assembly.

47. The exterior sideview mirror system of Claim 46, wherein said frame forms a bezel portion around said first reflective element.

48. The exterior sideview mirror system of Claim 47, wherein said frame forms a bezel portion around said second reflective element.

49. The exterior sideview mirror system of Claim 46, wherein a portion of said frame forms a demarcation between said first and second reflective elements.

50. The exterior sideview mirror system of Claim 46, wherein said support surface comprises a plate element.

51. The exterior sideview mirror system of Claim 50, wherein said plate element comprises a solid plate element.

52. The exterior sideview mirror system of Claim 50, wherein said plate element comprises a foraminous plate element.

53. The exterior sideview mirror system of Claim 46, wherein said support surface comprises a frame.

54. The exterior sideview mirror system of Claim 46, wherein said frame includes a first bezel portion and a second bezel portion, said first bezel portion extending around said first reflective element, and said second bezel portion extending around said second reflective element.

55. The exterior sideview mirror system of Claim 54, wherein said second bezel portion is angled forwardly with respect to said first bezel portion when said exterior sideview mirror assembly is mounted to a side of an automobile.

56. The exterior sideview mirror system of Claim 46, wherein said first reflective has a substantially unit magnification.

57. The exterior sideview mirror system of Claim 46, wherein said frame includes a forward facing open portion and a rearward facing open portion when said mirror assembly is mounted to an automobile, said first forward facing open portion receiving said first reflective element, and said rearward facing open portion receiving said second reflective
5 element.

58. The exterior sideview mirror system of Claim 57, wherein a rearward facing side of said forward facing open portion defining a bezel around said first reflective element.

59. The exterior sideview mirror system of Claim 58, wherein said frame includes a bezel around said second reflective element at said rearward facing open portion.